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ence I perceived several other very small peaks which had just come into view, and a few seconds afterwards the motion of the Moon disclosed a long stratum uniting them together at their bases, giving to the whole phenomenon the aspect of a *sierra* resting on the Moon's limb, and extending over an arc of about 20°. This continuous succession of prominences was intensely red, resembling in colour the most beautiful vermilion. The light was very much condensed, there being an entire absence of the streaks which characterized the larger prominences. The re-appearance of the Sun was preceded by an excessively narrow band of red light bounding the Moon's limb and connecting itself with the *sierra* previously observed. This long streak of light extended over an arc of about 25° on the Moon's limb. The reappearance of the first ray of the solar light resembled a bright star emerging at the Moon's limb. It occurred at $3^h\ 3^m\ 10^s$." *

On an Universal Equatoreal. By John Browning, Esq.

Wishing to employ the telescope used by Colonel Tennant for photographing the Solar Eclipse of 1868, for the purpose of photographing the next Solar Eclipse in India, it occurred to the Astronomer Royal that it would be a great advantage to have the instrument so made that it might be considered universal, and used in any latitude between the equator and 60° to 70° N. or S. of the equator. When the instrument had been altered so as to fulfil these conditions, I believe to the satisfaction of the Astronomer Royal, I saw that a more efficient instrument might have been made if it had been planned specially for this purpose. I have prepared for exhibition before the Society a model of such an instrument, and I am now making one of 10¼-in. diameter, for a gentleman at Sydney.

On reference to the diagram, the principle of construction will, I think, be evident.

The whole of the telescope, with the Polar axis, is carried by centres at E; large plates are attached to the sides of a cradle, which carries the Polar axis; AA is the Polar axis; BB the cradle in which it is carried; CC, an arc with a clamping arrangement, of which the adjusting screws are shown at FF; a clamp screw is hidden by the spur-wheels; when this screw is released, the angle of the Polar axis of the instrument may be changed from the horizontal to a nearly vertical position, or let to remain in any intermediate position between these, reclamped and finally adjusted by the capstan-screws FF; D is the clock, which, by means of a bevelled spur-wheel, gives motion to a wheel which revolves round the centre on which the Polar axis turns at E; this wheel, through the intermediation of two other wheels turns the driving-

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* Greenwich Mean Time. The observations were made with a Dollond Refractor of 2¾ inches aperture.

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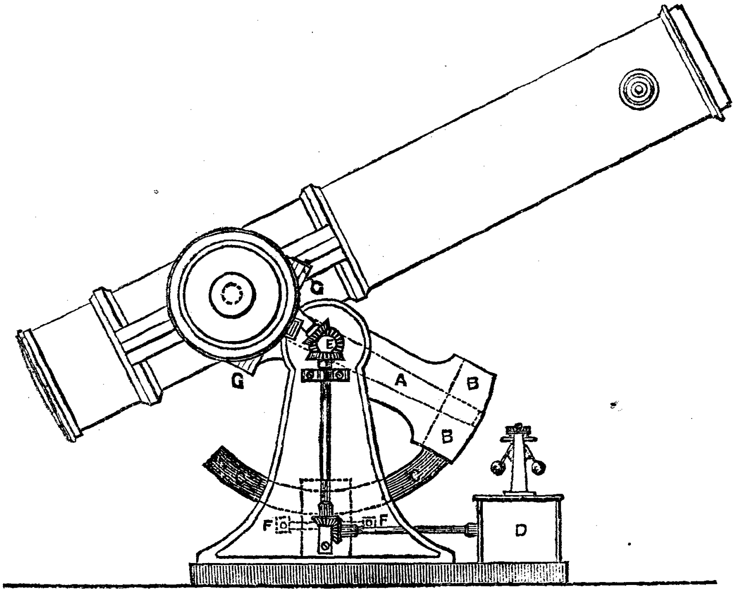
screw on the hour-circle GG, and thus drives the instrument; as the wheel EE runs loose on the spindle, and the distance between the wheel driven by E, and the main driving-screw on the hour-circle remains unaltered, it is evident that a change in the angle of position of the Polar axis does not interfere so as to prevent the instrument being freely driven by the clock.

As I have before stated, the suggestion that such an instrument should be made, was the Astronomer Royal's; and I have received efficient assistance from Mr. De La Rue in perfecting this contrivance.



On the Motion of Matter projected from the Sun: with special reference to the Outburst witnessed by Prof. Young of America.

By Richard A. Proctor, B.A. (Cambridge.)

Whatever opinion we may form as to the way in which the matter of certain solar prominences is propelled from beneath the photosphere, there can be little question that such propulsion really takes place. It seems clear indeed that some prominences, more especially those seen in the Sun's polar and equatorial regions, are formed—or rather make their appearance—in the upper regions of the solar atmosphere, and even assume the appearance of eruption prominences by an extension *downwards*, somewhat as a waterspout simulates the appearance of an uprushing column of water though really formed by a descending movement. But it is certain that other prominences are really phenomena of eruption, because Respighi, Zöllner, and Young (probably also Lockyer and Secchi) have been able actually to watch the uprush of the flowing hydrogen.

In the case of any matter thus erupted, we shall clearly obtain

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